

HINTS

RESPECTING

THE IMPROVEMENT

OF THE

Literary & Scientific Education

OF CANDIDATES FOR THE
DEGREE OF DOCTOR OF MEDICINE

IN THE

UNIVERSITY OF EDINBURGH,

HUMBLY SUBMITTED TO THE CONSIDERATION OF THE

PATRONS AND PROFESSORS OF THAT
INSTITUTION;

BY A

GRADUATE OF KING'S COLLEGE, ABERDEEN.

By John Thomson

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HINTS, &c.

GENTLEMEN,

Understanding that it is in contemplation to revise and to improve the *Curriculum*, or course of medical instruction which has been followed for many years in the University of this place, I trust that it will not be deemed presumptuous in one, who feels grateful for the share of education he has received in it, to avail himself of the opportunity which now presents itself, of submitting to your consideration a few observations with regard to Medical Education in general, and with regard to the Literary and Scientific Qualifications which ought to be required of those on whom the honors of the Degree of Doctor in Medicine are conferred.

A century has nearly elapsed since a regular School of Medicine was first opened in the University of Edinburgh, and the numerous benefits which have resulted from this establishment have been long felt and recognized in every part of the civilized world. The Teachers who, during this period, have filled the medical chairs, have, by their talents and labours, and by the judicious improvements in the system of medical instruction which they have successively adopted, raised the fame of this School to the height which it at present

holds, and which it must be the wish of every one connected with the University of Edinburgh to endeavour to support and to perpetuate. The alterations in the system of Medical Education, reported to be at present under the consideration of the *Senatus Academicus*, and the changes proposed to be made in the regulations concerning Graduation, must be regarded by the Medical Profession, and by the Public, as indications of the desire which the present members of the Medical Faculty have to emulate their predecessors, and to maintain the reputation of their school, by adding to the value of the Degrees to be in future conferred by the University.

It will be readily allowed by every one who is in any degree acquainted with Medicine, that to study it as a Science, and to practise it with advantage as an Art, much learning, knowledge and experience are required; and, therefore, that it must be a matter of the highest importance to Society, that young men, who are to apply themselves to the Medical profession, should be well instructed in all those preliminary branches of education which are necessary to the study of Medicine, or calculated to facilitate their progress in it. Indeed, the slightest view of Medical Science is sufficient to shew, that no one can enter, with any prospect of advantage, upon its study, who has not previously acquired some knowledge of the Latin and Greek languages, and of the Mathematical and Philosophical Sciences.

To say nothing of the advantages which young men derive from the discipline of a Classical education, at a period of life in which the powers of the mind require to

be developed, guided and exercised, and in which habits of attention and application are most easily formed, how, it may be asked, is it possible for a student, ignorant of Latin and Greek, to profit by the perusal of a medical book, or to understand a medical lecture? The terms of the medical art have been almost all borrowed from these languages; and it seems impossible to understand properly their meaning, without possessing some knowledge of the sources from which they have been derived.

We cannot enter far into the consideration of the phenomena of the different Functions of the Animal Economy, the branch of medical knowledge which has been termed Physiology, without perceiving, that to understand, or to explain these Functions properly, besides a knowledge of Anatomy and Chemistry, there is required also an acquaintance with Mathematics and Natural Philosophy; for the different motions of the solid parts of the human body can no more be understood properly, without a knowledge of Mechanics, than the composition of these solids can be understood without the knowledge of Chemistry.

“ When we inquire into this subject,” as has been justly remarked by Dr John Gregory, “ we find the human body a machine, constructed upon the most exact mechanical principles. In order, then, to understand its movements, we must be well acquainted with the principles of *Mechanics*. Considering the human body in another view, we find fluids of different kinds circulating through tubes of different diameters; and, therefore, find that the laws of their motions cannot be understood

without a previous knowledge of the principles of *Hydraulics*. In the same way, the eye appears to be a most admirable optic machine; and the phenomena of vision are found to be inexplicable, without a knowledge of the principles of *Optics*. As the human body is surrounded with a heavy, elastic fluid, the Atmosphere, subject to various changes in respect of gravity, heat, moisture and other qualities, which greatly influence the human constitution, it is proper to be acquainted with the nature and properties of this Fluid, which requires a knowledge of the sciences of *Pneumatics* and *Meteorology*. It were easy to adduce," adds this elegant writer, "were it required, many more examples to show how absolutely necessary a knowledge of the various branches of Natural Philosophy is to the right understanding of the animal economy, both in its sound and morbid states."* If these opinions of Dr Gregory are admitted to be just, it seems difficult to conceive why the study of Natural Philosophy should not be considered as equally indispensable to a Medical Education with that of Chemistry.

But besides the possession of a certain degree of knowledge of the Anatomical structure and Chemical composition of the human body,—of the uses of its different parts, and of the various organic functions which these parts perform—there is required also, on the part of the student and practitioner of medicine, an acquaintance with the Sensorial, Intellectual and Moral faculties with which man is endowed,—with the reciprocal influences of his corporeal and mental faculties upon one

* On the Duties and Qualifications of a Physician. p. 84. Edinb. 1722.

another,—and with the changes to which, in the progress of health and disease, these faculties are subject. But how, it may be asked, is this knowledge to be obtained, unless by the study of Logic and of Moral Philosophy?

Setting aside altogether the consideration of the beneficial effects which the study of these Sciences is calculated to produce upon the intellectual powers and moral character of those who engage in it, a knowledge of the Science of Mind, and of every thing which can influence the perceptive, intellectual and moral powers of man, becomes absolutely necessary to him whose duty it often is to judge of the existence of the derangements which so frequently take place in this part of the human constitution, from external injury, from disease, and from the states of fever and madness,—to describe their varieties,—and to conduct their treatment.

There is, if we may be permitted so to speak, an Anatomy, a Physiology, and a Pathology, of the mental as well as of the corporeal part of our frame, forming the branch of science usually denominated Metaphysics, the study of which seems to be indispensably necessary to a due knowledge of the Animal Economy. This important branch of science, requires to be studied by medical men in connection with the observation and investigation of the various physical and vital causes which influence the intellectual part of the human constitution.

It may be hoped, that “the time is come for placing Medicine on a level with the other sciences, and for

determining with precision their mutual relations. Situated between physics and moral philosophy, it is of peculiar importance to discover, and to point out, with clearness and exactness, the true relations which it bears to each of these sciences. It must borrow the strict and precise language of the former, and the liberal, and, as it were, familiar tone of the latter. It must take advantage of all that the intellectual philosophy has most rigorously established in its theories, and of all the delicate illustrations which its daily application to the sensitive frame suggests. In short, after having, by the sure methods of observation, experiment and reasoning, reduced its principles to a regular system, it will be necessary, that the improvements in its plan of instruction should form, for practice, minds at once profound, comprehensive, firm and pliant, who join to the light of a superior understanding, that knowledge of life and manners, and that facility of action, without which all the gifts of nature and of art are almost wholly useless. Happy combination, perhaps even indispensable, for preventing the practice of a science, of which the objects are so various and so delicate, from becoming a mere scourge of humanity*.”

If the slight sketch which has been given of the nature of the preliminary branches of education, requisite for entering with advantage upon the study of Medicine, be just, it must be obvious that those who are destined

* Cabanis' *Revolutions of Medical Science*, translated by Dr Henderson, p. 5, 6.

for the exercise of the medical profession, by whatever name they are afterwards to be denominated; whether that of Physician, Surgeon or Apothecary, should all receive the same kind of elementary and preparatory education; for it is this only that can enable them to acquire a proper knowledge of the different branches of medical science, that can ensure their mutual co-operation in the practice of their art, or qualify them to discharge, with full utility to the Public, the duties of any particular branch of medical practice to which they may afterwards be induced to devote their attention. The enforcement, therefore, by our Universities, and by the Colleges of Physicians and Surgeons, on those to whom they grant medical and surgical degrees and diplomas, of a due acquaintance with those branches of science which are universally acknowledged to be necessary to the study of Medicine, is the indispensable duty of these bodies; and appears to me to be the greatest reform which the present state of medical education admits of; to be the only proper barrier that can ever be raised by the Medical Profession, or which ought to be recognised by the Public as forming a boundary between the regular and the irregular practitioners of physic;—between Medicine practised as a learned and liberal profession, or followed as an ignoble, degraded and degrading art. The members of the Medical Profession, in order to be respectable, must evince, by their literary and scientific acquirements, that they are indeed worthy of the patronage of the Public, and of the privileges to which medical degrees and surgical diplomas are intended to give them a title.

With regard to the Professional Education of Medical Practitioners, it is unnecessary, I conceive, to employ any arguments to convince you how much Society is interested in their possessing a thorough knowledge of all the different branches of Medicine, and consequently in the proper regulation of the Medical Schools in which this knowledge must be acquired. "The Practice of Medicine," it has been observed,* "has long been nominally divided into two departments, Physic and Surgery. Physic is said to have for its object the treatment of internal, Surgery that of external diseases; and each of these departments of the healing art has been supposed to be the peculiar province of a distinct and differently educated practitioner. But though this is a distinction which has been often recognised in the practice of the medical profession, it must be confessed that the limits between Physic and Surgery are not very precisely marked, and that the respective functions of the Physician and Surgeon, long as those names have existed, are still but very inaccurately defined. The most superficial acquaintance with the symptoms, progress and termination of the various morbid affections to which the human body is liable, must be sufficient to convince every unprejudiced inquirer, that there is but a slight foundation, if indeed there be any, for this distinction, in the nature of the diseases which these practitioners are required to treat, or in the modes of treatment by which the diseases themselves may be cured or relieved. Experience has long shewn, not only that the use of internal remedies is required in a large pro-

* Lectures on Inflammation, by Dr Thomson.

portion of the diseases which are regarded as strictly surgical, but also that there are few diseases which come under the care of the Physician, in which morbid affections, requiring the manual aid or practical skill of the Surgeon, do not frequently occur."

"The importance therefore to Society, of every student of medicine being obliged to obtain, not only a general, but a minute, knowledge of Physic and Surgery, must appear obvious when we reflect how very small a proportion of those who are educated for the medical profession find it possible, in after-life, to devote their attention exclusively to one of these branches, and to forego the advantages which they reap from the practice of the other. It is in great cities only, that the distinction in the exercise of the medical profession, between Physician and Surgeon, has been, or can be, observed: and even in those cities where this distinction has prevailed in the highest degree, how small a portion of the community, it may be asked, has enjoyed the advantages supposed to be derived from this division of the healing art? The rich, it is true, may in all cases of danger, whether real or imaginary, add the attendance of the physician or surgeon to that of their ordinary medical guide, the apothecary: but the middling classes and the poor, who form the greatest body in every community, must either be contented to live and to die without the advice or assistance of those who practice physic and surgery as distinct professions, or betake themselves to some of the asylums or hospitals that are maintained at the public expence. A physician in a large city ought to be regarded as a practitioner, to

whom recourse is to be had in cases of difficulty and danger; but the proper education of this class of practitioners, and the necessity which exists for their having enjoyed opportunities of extensive practice, as well as having gone through a course of academical study, in order to qualify them properly for the duties of consultation, are points which do not seem to have been hitherto fully investigated by the medical profession, or rightly understood by the public."

" In small towns, on the contrary, and particularly in country villages, subdivision of labour in the medical profession is totally inadmissible. In these situations, the customs, convenience, and necessities of their patients do not admit of any distinctions among medical practitioners, which are not immediately derived from a real or fancied superiority of professional skill. But how extensive the practical information is which is required to qualify the village or country practitioner for the duties that he has to perform, will be obvious, when we reflect that he must undertake the cure of all the accidents and diseases to which men, women and children are liable, in the district in which he is to practise. It is this circumstance which renders it so desirable for the Public that every young medical practitioner should be well instructed in all the branches of practical Medicine and Surgery before he leaves College, and, in the commencement of his practice, placed for a time under the superintendence and direction of men older and more experienced than himself. Without the advantages to be derived from this mode of medical instruction, the young practitioner, when he first en-

ters upon the practice of his profession, can supply the want of personal experience, only by the lessons which he obtains from the errors and mistakes he commits, at the hazard or even to the detriment of his patients."

"An arrangement of medical practitioners according to seniority, or implied experience, has long been advantageously followed in the practice of the Army and Navy; and accordingly, a general acquaintance with all the branches of practical medicine is very properly required of those who are educated for these two departments of the public service. In these departments, the distinction between Physician and Surgeon, though occasionally recognised in name, and in particular duty, has never been rigidly carried into effect; for in the Army and Navy of this, as well as of every other country with which I am acquainted, the surgeons, together with their assistants or mates, have been the physicians in ordinary, as well as the apothecaries, of the men whose health and lives are intrusted to their care."

"Since, therefore, in the ordinary and general practice of Medicine, Physic never has been, and never can be, separated from Surgery, it seems but reasonable that those who, from the nature of their profession, and from the circumstances of the situations in which they may be placed, must practise Physic and Surgery together, should learn equally the rudiments of both arts. These arts have had the same origin, and they have the same end: The human body is the sphere of their exertions, and whatever can affect it, in matter, vitality or mind, is the object of their researches."

It is to be presumed, that besides providing for the better preliminary education of Students of Medicine attending the University of Edinburgh, the new *Curriculum* will contain such alterations in the course of the medical studies to be followed, and recommend the institution of such additional Professorships as the present extended state of Medical Science may require. It is of great importance to the Public that you should inquire, whether a division of duties among the members of the Medical Faculty, made a century ago, is at all adapted to the wants and to the condition of the times in which we to live; or calculated to comprehend, and to exhibit to Students, a view, sufficiently complete, of all the discoveries and improvements which have been made in the Theory or in the Practice of Physic, and in those collateral branches of Science, upon the progress of which the advancement of Medicine mainly depends?

The chief of these collateral branches are, undoubtedly, Natural Philosophy, Chemistry, Natural History, and Botany; and it is deserving of your consideration, whether in future these branches should form a separate Faculty of Natural knowledge, or be conjoined with that of Medicine? That the student of Medicine must derive as much benefit from the study of Natural Philosophy and of Natural History, as he possibly can do from that of Chemistry and of Botany, is a point which will I believe be contested by no one who is in any degree acquainted with the relations which these different sciences bear to Medicine.*

* See Boerhaave's "Methodus Studii Medici," Vol. I.

It may be deserving of your consideration, whether this may not be the proper time to introduce some changes into the constitution of the Faculty, strictly Medical? Whether, for example, the duties at present performed by the Professor of the Theory of Medicine, should not be assigned to two distinct Professors at least—Physiology to one, and Pathology to another? The discoveries which have been made, and which are daily making in each of these branches of medicine, are of such extent and importance, as to render it quite impossible, it is conceived, for any Professor, whatever his talents and assiduity may be, to give a sufficient account of either of them, in a period shorter than that which is allotted to the courses of medical lectures in the University of Edinburgh.

It may be worthy of your consideration, also, whether Surgery, a branch of so great extent and importance, should not be taught by a distinct Professor, and that Professor a practical Surgeon?—whether lectures on Clinical Surgery be of less importance to the great majority of those who receive medical degrees in the University of Edinburgh, than lectures upon Clinical Medicine;—and whether the course of Medical Jurisprudence should not be added—as that of Midwifery has lately very properly been, to those Classes, an attendance upon which is necessary for graduation?

In judging of the preparatory and professional branches of knowledge which students should possess on whom medical degrees are conferred by your University, it may be proper for you to inquire into the regulations

relative to Graduation, which have been adopted in other Schools of Medicine, particularly in those in which it has been lately attempted to adapt the Course of medical study to the present state of the Medical Sciences. I shall content myself simply with pointing out the Medical Schools of Austria and France to your notice.

In order to be admitted a Student of Medicine in an Austrian University, it is necessary that the candidate should produce certificates of his having studied for three years, in a Lyceum, the Latin and Greek languages, History, Mathematics, and Natural and Moral Philosophy*. The Course of Medical Study extends to five years, and comprehends lectures on the following Subjects :—

1st year.—Introduction to Medico-Chirurgical Study, and Natural History; Anatomy; and Botany.

2d year.—Physiology; and General Chemistry.

3d year.—General Pathology and Therapeutics; Midwifery; Materia Medica et Chirurgica; General and Special Pathology of external Diseases; Ophthalmology; and Demonstration of Surgical Instruments and Bandages.

4th year.—Special Therapeutics of Internal Diseases; Clinical Lectures on Internal Diseases; and Veterinary Medicine.

5th year.—Special Therapeutics of Internal Diseases; Clinical Lectures on Internal Diseases; Medical Jurisprudence; and Medical Police.

In France, in conformity with the regulations lately established for the Schools of Medicine in that country*, no one can enter as a student in these schools without producing certificates of his being Bachelor of Letters and of the Sciences, to obtain which it is necessary for him to have studied, in the established colleges, Arithmetic and Geometry, Natural Philosophy, Chemistry and Natural History, Rhetoric and Philosophy.

The course of Medical Study is of four years duration, and comprehends the following branches, each of which is taught by a separate Professor.—

1st year.—Anatomy; Physiology; Chemistry; Medical Natural Philosophy; Botany; and Hygiene.

2d year.—Anatomy; Physiology; External Pathology; Hygiene; Operative Medicine; and Pharmacy.

3d year.—Operative Medicine; External Pathology; Internal Pathology; Clinical Medicine; Clinical Surgery; Therapeutics; and Materia Medica.

4th year.—Clinical Medicine; Clinical Surgery; Internal Pathology; Legal Medicine; Therapeutics; and Midwifery.

Whether any of the reforms which have been made in the preparatory or in the professional education of the Graduates in Austria and France shall appear to

* See the "Code des Médecins, Chirurgiens et Pharmaciens, &c. par J. P. Beullac. Paris, 1823.

you as proper to be introduced into the new Medical *Curriculum* for the University of Edinburgh, is a matter which must be left entirely to your consideration. But of one thing you may be assured, that, in the present increasing taste for improvement in literary, scientific and professional education which every where prevails, and which at this moment pervades even the working classes of society in Scotland—if it shall appear to the Public that you have declined to introduce the necessary reforms into the Medical Education of your University, these reforms will be attempted by private individuals, countenanced, it is to be hoped, by the Colleges of Physic and Surgery in this place, whose bounden duty it is to provide for the proper education of those who are bred to the medical profession; and to encourage, by all the means in their power, every attempt which is made to extend and to improve this education.

In this country, you have long had before you an example, in another learned profession, of the advantages to be derived, from a preparatory education, in the qualifications which are required of those who are permitted to enter upon the study of Divinity in the different Universities of Scotland. It cannot but be considered as in the highest degree creditable to the Clergy of this country, that, though those who devote themselves to this vocation, neither are from a more wealthy class of society, nor have the prospect of greater emoluments than the members of the other two learned professions, their preparatory education con-

sists of four years regular attendance on a University, and comprehends almost all those branches of knowledge, the necessity of which, in a regular medical education, it is the object of this letter to point out and inculcate. That a similar course of preparatory education should not hitherto have been required of those who enter upon the study of Law or Physic, is a great misfortune to these professions, and the want of it the chief source, perhaps, of whatever has been illiberal, sordid, ignorant or mischievous in the practice of them.

The Schools of Medicine, and the Colleges of Physic and Surgery, which at present exist in Great Britain and Ireland, exhibit many curious anomalies and contradictions in their Statutes and Practices. Indeed, the examination of the different constitutions of these Corporate Bodies is sufficient to shew that they have not been formed upon any general principles or enlarged views of public utility, but that monopoly, or privilege of some sort or other, has always been a main object of their establishment. Their Bye-laws and Statutes have often, it is true, a relation to the practice of the art or trade of Physic, but very little, comparatively, to the promotion of the Science of Medicine, or to the literary, scientific and philosophical Education of those who are to practise it as an art. Some of our Universities claim the right of conferring the highest honours or degrees in medicine, without affording, by any of their institutions, the means of instruction, either in the Theory or in the Practice of Medicine; and our Medical Schools, without, I believe, a single exception,

admit to their lectures all who present themselves, without requiring of them any proofs of their having received a previous literary or scientific education. The Medical Faculty in the University of Edinburgh has hitherto presented a most singular anomaly; for though appearing to be a branch of a literary, scientific and philosophical University, yet it has never required from those on whom it has conferred the degree of Doctor of Medicine, any certificates of qualification, besides attendance upon medical classes in some University; and though itself strictly a Medical School, it has not hitherto admitted the efficacy of any medical instruction which has not been received within the walls of a University. Who could believe, that the lectures which are given in the different Medical Schools of London, for example, have hitherto been of no avail in qualifying a student to receive the honour of a medical degree from the University of Edinburgh? while Courses of lectures on any branch of Medicine, delivered in the Universities of Aberdeen, or St. Andrews, or in any other University at home or abroad, have been held, by the statutes of the Medical Faculty of Edinburgh, to be, in the ceremony of graduation, equivalent in value to their own. Indeed, the members of the Medical Faculty seem hitherto to have forgotten that it is the possession of a sufficient stock of preparatory and of professional knowledge on the part of those who receive Degrees and Diplomas in which the Public is interested, and of very little consequence to it in what Schools this knowledge has been obtained.

In concluding this letter, the writer has only to add, that the opinions which it contains, though hurriedly

put together, are not the hasty suggestions of the moment, but the deliberate result of much observation and reflection on the education of medical men,—on the duties which they have to perform to the Public,—and on the nature and grounds of the distinctions which ought to exist among them. They come from one, who, sensible of the defects of his own education, is very desirous to promote that of the rising members of the medical profession—from one who is no novice in the art which he practises, but who has passed through the several gradations of Surgeon's apprentice; Apothecary's assistant, Surgeon's and Physician's clerk in a public Hospital; Surgeon-apothecary, or Family practitioner; Doctor of Medicine;—and who, by the favour of his medical Brethren, and by the patronage of the Public, is at length a Consulting Physician. They come from one, who, were he a member of the *Senatus Academicus*, should, on an occasion such as the present, feel it to be his duty to express these opinions orally in his place, as he conceives it to be a duty which he owes to the Public to express them in this manner to You.

With every good wish for the increasing reputation and prosperity of the University of Edinburgh, and for the continuance of the usefulness of its Medical School, he has the honor to subscribe himself,

GENTLEMEN,

Your most obedient humble Servant.

A GRADUATE OF KING'S COLLEGE, ABERDEEN.

